

WHAT IS CLAIMED IS:

1. An optical device package which comprises:

- a) a substrate having an upper surface;
- b) an optical fiber mounted to the

5 substrate;

c) a frame mounted to the upper surface of the substrate, the frame including conductive pathways extending between a top surface of the frame and a bottom surface of the frame; and,

10 d) contact means disposed on the top surface of the frame for flip mounting the optical device package to a platform.

2. The optical device package of claim 1 wherein the conductive pathways include at least one
15 conductive via which extends through the frame.

3. The optical device package of claim 1 wherein the conductive pathways include at least one conductive path which extends along a side surface of the frame.

4. The optical device package of claim 1 wherein the optical fiber is disposed between the substrate and the frame.

5 5. The optical device package of claim 4 wherein the frame has a recess for accommodating the optical fiber.

6. The optical device package of claim 4 wherein the optical fiber is disposed through a ferrule.

7. The optical device package of claim 2 wherein the contact means includes at least one solder ball and the at least one conductive via terminates at one end at the solder ball.

8. The optical device package of claim 7 further comprising a conductive trace on the upper surface of the substrate in electrical communication with the conductive pathway of the frame.

15

9. The optical device package of claim 1 further including an optical semiconductor component mounted to the upper surface of the substrate.

10. The optical device package of claim 9 wherein the optical semiconductor component is selected from the group consisting of a laser diode, light emitting diode and photodetector.

11. The optical device package of claim 1 wherein the frame includes an interior ledge.

12. The optical device package of claim 11 wherein a lid having a top surface is mounted to the ledge of the frame such that the top surface of the lid is positioned below the level of the top surface of the frame.

13. The optical device package of claim 11 wherein a lid having a top surface is mounted to the ledge such that the top surface of the lid is positioned above the level of the top surface of the frame.

14. The optical device package of claim 13
wherein the contact means includes at least one solder
ball having a top surface and wherein the top surface of
the solder ball is positioned above the level of the top
surface of the lid.

15. The optical device package of claim 1
wherein the substrate further includes a lateral groove
defining a distal facing stop surface, and the optical
fiber includes a proximal end abutting the distal facing
stop surface.

16. The optical device package of claim 1
wherein the frame has a band-like shape circumscribing an
open area and has a ledge onto which a lid is mounted.

17. The optical device package of claim 1 where
the frame has a U-shaped configuration and the optical
device package includes a lid mounted to the upper
surface of the substrate, the lid including a recess.

18. The optical device package of claim 1 wherein the frame is fabricated from a sintered ceramic material.

19. A method for making an optical device package comprising the steps of:

a) mounting an optical fiber to a substrate having an upper surface;

b) forming a conductive trace on the upper surface of the substrate;

c) mounting a frame to the substrate, the frame having a frame upper surface with at least one solder pad thereon, and a conductive via extending from the solder pad to the conductive trace; and,

d) mounting an optical semiconductor component on the substrate in contact with the conductive trace and in alignment with the optical fiber.

20. The method of claim 19 further including the step of mounting a lid to the frame.

21. The method of claim 19 further including the step of mounting a lid to the substrate.

22. A method for assembling an electronic circuit comprising:

a) providing an optical device package which includes

i) a substrate having an upper surface;
ii) an optical semiconductor component mounted to the substrate;

iii) an optical fiber mounted to the substrate in alignment with the optical semiconductor component;

iv) a frame mounted to the upper surface of the substrate, the frame having an upper surface with a patterned array of solder balls thereon, and at least one conductive pathway extending from each solder ball to the upper major surface of the substrate; and

v) at least one conductive trace electrically connecting the at least one conductive pathway and the optical semiconductor component;

b) providing a circuit board having a patterned array of bonding pads which is a mirror image of the patterned array of solder balls on the frame;

c) inverting and positioning the optical device package such that individual solder balls of the

patterned array solder balls of the optical device
package are in contact with corresponding individual
bonding pads of the patterned array of bonding pads on
the circuit board; and

- 5 d) fusing the solder balls to the corresponding
bonding pads.